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Sustaining lean in organizations through the management of tensions and paradoxes

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1. Introduction

Although (Eisenhardt and Westcott, 1988) argued that the inherent organizational paradoxes in lean are source of energy that facilitates lean transformation, the literature has only recently (see Maalouf and Gammelgaard 2016) started developing a systematic approach for managing lean paradoxes. Organisational paradox “*denotes contradictory yet interrelated elements*” (Lewis, 2000, p. 760) and involves “*contradictory, mutually exclusive elements that are present and operate equally at the same time*” (Lewis, 2000, p.2). For instance, lean and just-in-time practices rely on competing processes and designs, such as increasing employee empowerment as well as adopting statistical processes and controls, potentially limiting employee autonomy (Eisenhardt and Westcott, 1988). These two opposing yet complementary features of lean system accentuate structural tensions within organisations (W. K. Smith and Lewis, 2011). Such structural tensions typically result in paradoxical situations, which emerges as organisations implement lean for creating competing design to enhance performance (Lewis, 2000).

Managing structural tensions require new managerial insights, where managers cannot just rely on tools from the ‘traditional’ operations management. In this context, Poole and Van de ven (Poole and Van de, 1989) propose that researching on organizational paradoxes provide a promising opportunity to create richer and more complex management research. A focus on organizational paradoxes, “*moves us away from the concept of organizations as static systems coping with problematic environmental fluctuations through deviation counteracting processes to a concept of organizations as continually dynamic systems that carry the seeds of change within themselves*” (Quinn and Cameron 1988, p. 82).

In the context of lean implementation, the research has identified a range of organizational paradox embedded in lean philosophy (Osono, Shimizu, and Takeuchi, 2008). Yet, with the exception of (Maalouf and Gammelgaard, 2016), the research has paid very little attention to the management strategies for dealing with the organizational paradoxes in lean. The investigation of the management strategies for dealing with lean paradoxes is crucial for the successful lean transformation as these strategies aim to reduce employees’ resistance to lean implementation (Maalouf and Gammelgaard 2016). This book chapter builds on the work of (Maalouf and Gammelgaard, 2016) and investigates further the use of a range of management strategies for dealing with lean paradoxes and their outcomes in a group of

selected cases. The cases include a financial company (Denmark), a hospital (Denmark) and a large garment manufacturer (Bangladesh).

The remaining part of the book chapter is structured in the following way. In the second and third sections, we define and describe the four types of organizational paradoxes followed by a presentation of the different strategies used for dealing with the organizational paradoxes in lean. Sections 4, 5, and 6 are dedicated to the analysis of the paradoxes and the management strategies adopted in the three cases. Section 7 contains conclusions and recommendations regarding the perspectives in using organizational paradoxes as framework for facilitating lean implementation in different contexts.

2. Types of organizational paradoxes

The paradox literature identifies four types of organizational paradoxes: paradoxes of organizing, paradoxes of belonging, paradoxes of learning and paradoxes of performing ((Smith and Lewis 2011); (Lewis 2000); (Lüscher and Lewis 2008)). Table 1 presents a description of each paradox and clarifies the inherent tensions present in each situation.

Table 1: The four types of organizational paradoxes

Type of paradox	Description
Learning	The learning paradox is related to the ability of individuals to assimilate new knowledge that is needed to adjust to variations and change. The paradox usually involves struggle between the old and the new knowledge.
Belonging	The paradox of belonging rotates around tensions of identity and interpersonal relationships that arise between the individual and the collective. These paradoxes emerge because actors strive for both preserving their own identities and maintaining a collective affiliation.
Organizing	This paradox emerges as organizations create competing designs and processes in order to enhance performance. Increasing employee empowerment and creativity as well as adopting formal statistical processes and controls is one example of this paradox.
Performing	The performing paradox is initiated by conflicting demands among different stakeholders. Moreover, organizational change tends to exacerbate the tensions of performing by fostering competing measures of managerial success.

The paradox of learning emerges as individuals struggle between the demands of old and new knowledge, both needed to perform their activities. The paradox of learning is made salient under lean transformation, which calls for learning a set of skills and applying these in a flow setting rather than achieving higher levels of technical proficiency in narrower areas of specialisation (Womack et al., 1990). The paradox of belonging rotates around tensions associated with time and effort dedicated to personal goals as opposed to time and effort dedicated to team activities. The paradox of belonging accentuates during lean transformation as employees attempt to make sense of two competing roles: cross-functional team role vs functional role (Lüscher and Lewis, 2008). Achieving cross-functional integration under lean system accentuates the belonging paradox as people struggles between the dedication to the new team role and the loyalty to the functional role (Karlsson and Åhlström, 1996).

The paradox of organizing emerges from competing work designs related to discipline and standardization versus autonomy. In fact, lean system contains features of both mechanistic and motivational designs. While the mechanistic design is grounded on standardization and efficiency, the motivational design is grounded in organisational greater autonomy, job rotation and teamwork ((Adler and Borys

1996); (Cullinane et al. 2013); (Cooney 2002)). Finally, the paradox of performing is initiated as individuals tend to accommodate different and even conflicting performance measures. Indeed, lean accentuates the performing paradox as it entails pursuing multiple dimensions of performance, such as lower costs, superior quality and short delivery time ((Nawanir, Teong, and Othman, 2013); (Kosuge, Modig, and Åhlström, 2010); (Shah and Ward 2003); (Adler, Goldoftas, and Levine, 1999); (Womack, Jones, and Roos, 1990)).

3. The management of organizational paradoxes

Ford and Backoff (Ford and Backoff, 1988) define organizational paradox as “*some ‘thing’ that is constructed by individuals when oppositional tendencies are brought into recognizable proximity through reflection or interaction*” (p. 89). According to this view, organizational members confront and construct environments through their mental frames, which are the cognitive mechanisms that form the context within which reality construction and the creation of paradoxes occur ((Watzlawick, Weakland, and Fisch 2012); (R. E. Quinn and Cameron 1988)). Thus, dealing with paradoxes must take into account the mental frames of the individuals involved in organizational change, and the success of change through the management of paradoxes must entail some level of reframing or the creation of new mental frames ((Lewis 2000); (W. K. Smith and Lewis 2011)). Furthermore, the reframing process starts with some trigger or event that unfreezes a particular mental frame (way of understanding a situation) and indicates that this understanding might be changed. To be effective, the challenge to the established mental frames has to be strong because, once mental frames are developed, they tend to endure (Bartunek, 1993). Maalouf and Gammelgaard (Maalouf and Gammelgaard, 2016) give example of reframing during lean implementation as *standardization can make sense to employees* as opposed to the previous mental frame that *standardization is equivalent to rigidity*.

Moreover, managerial responses can influence reframing and change in two ways. First, a response can trigger an initial stimulus for challenging existing mental frames by making individuals aware of their paradoxical situations and by establishing conditions and setting directions that enable breaking the vicious circle (Eisenman and Rothenberg, 1980). Second, a response can motivate individuals to refrain from constraining the outcome of the process (Bartunek 1993). In similar context, R. E. Quinn and Cameron (R.E. Quinn and Cameron, 1988) cite that the effective management of organizations require exploring and balancing contradictions and oppositions. They also note that effective organizations “*do not pursue a single set of criteria; rather, they pursue competing, or paradoxical, criteria simultaneously*” (p. 10), such as standardization versus autonomy, centralization versus decentralization and short- versus long-term focus. Furthermore, Smith and Lewis (Smith and Lewis, 2011) argue that organizations are inherently paradoxical and the opposing yet complementary dualities of paradoxes are embedded in the process of organizing. Moreover, the authors argue that the paradoxes remain latent until they are made salient through social interaction, actors’ cognition and organizational change. As consequence, tensions intensify to the point that organizational actors experience and recognize their effect.

In responding to paradoxes, scholars present two generic strategies: acceptance and resolution. Acceptance assumes that tensions and contradictions can coexist and actors can benefit from the increased understanding of the relationship between the two opposites (K. K. Smith and Berg, 1987). In acceptance strategies, actors “*play through rather than confront tensions, thereby avoiding potentially disastrous conflicts*” (W. K. Smith and Lewis, 2011, p. 385). Moreover, acceptance entails that actors

confront paradoxes and discuss their tensions, which help constructing a more accommodating understanding of the paradoxical phenomenon ((K. K. Smith and Berg 1987); (Vince and Broussine 1996)). In general, acceptance of the presence of contradictions provides a comfort with tensions and a new understanding of the relationship between opposites, thus, enabling actors to use resolution strategies for dealing with paradoxes. Acceptance strategies entail coaching, mentoring, experimentation and intense involvement of employees, who are intrinsically motivated toward the adoption of new mental frame that accommodates lean tensions and paradoxes (Maalouf and Gammelgaard 2016).

Resolution involves responding to paradoxical tensions by separating physically or temporarily tensions the two poles of paradox. Resolution strategies entail also finding synergies that accommodate the opposing elements of a paradox. The spatial or temporal separation of the two poles of paradox reduce immediate tensions and help actors identify synergies between opposites by making explicit how one pole of the paradox relates to the other (Poole and van de, 1989). For instance, under lean implementation, allocating daily activities and problem solving tasks to different group of employees is an example of spatial separation, while allocation a part of an employee working time to problem solving tasks is an example of temporal separation (Maalouf and Gammelgaard, 2016). Separation is likely to create focus among employees that reduces the immediate pressure and help individuals achieve better understanding of the paradoxical phenomenon and adopt more sustainable management strategies (Poole and van de, 1989). Resolution strategy also entails synthesis by creating organizational structures and processes that accommodate the opposing elements of a paradox simultaneously (Poole and van de, 1989). Under lean implementation, synthesis entails solutions that balance standardization and autonomy, such as focusing on the standardization of the repetitive parts of a task so that employees have more time to invest in other creative tasks (Maalouf and Gammelgaard, 2016).

Table 2 presents a summary of the management strategies for each type of paradoxes. These strategies are either acceptance (Employee involvement, Experimentation, Facilitation, Coaching and Mentoring, Class training and On-the-job training) or resolution strategies (Temporal and Spatial separation; Synthesis, and Goal setting).

Table 2 - Management strategies for each type of lean paradox

Type of paradox	Management strategies	
	Acceptance	Resolution
Paradox of organizing	<ul style="list-style-type: none"> • Employee involvement ((Maalouf and Gammelgaard, 2016; (Glew et al., 1995); (Shadur, Kienzle, and Rodwell, 1999)) • Experimentation, and trial-and-error (Maalouf and Gammelgaard, 2016); (Rerup and Feldman, 2011); (Cyert and March, 1992)) 	<ul style="list-style-type: none"> • Synthesis (Maalouf and Gammelgaard, 2016); (Poole and van de, 1989))
Paradox of performing		<ul style="list-style-type: none"> • Temporal separation ((Maalouf and Gammelgaard, 2016); (Poole and van de, 1989)) • Spatial separation ((Maalouf and Gammelgaard, 2016); (Poole and van de, 1989)) • Synthesis((Maalouf and Gammelgaard, 2016); (Poole and van de, 1989)) • Goal setting ((Maalouf and Gammelgaard, 2016); (Locke and Latham, 2013))

Paradox of belonging	<ul style="list-style-type: none"> • Facilitation of group discussions ((Maalouf and Gammelgaard, 2016) (Ellinger and Bostrom, 1999) 1999; (Cao et al., 2012)) • Coaching and mentoring ((Maalouf and Gammelgaard, 2016) (Ellinger and Bostrom, 1999) 1999; (Cao et al., 2012)) 	
Paradox of learning	<ul style="list-style-type: none"> • Class Training ((Maalouf and Gammelgaard, 2016) (Ellinger and Bostrom, 1999) 1999; (Cao et al., 2012)) • On the job training ((Maalouf and Gammelgaard, 2016) (Ellinger and Bostrom, 1999) 1999; (Cao et al., 2012)) • Coaching and mentoring ((Maalouf and Gammelgaard, 2016) (Ellinger and Bostrom, 1999) 1999; (Cao et al., 2012)) 	

In the next section, we present the 3 cases that illustrate the identification of the different types of organizational paradoxes in lean (2 cases from Denmark, one case from Bangladesh). Moreover, we present in each case the repertoire of managerial responses to deal with each paradox and discuss the outcomes. The cases are selected from different geographies and sectors in order to capture the effect of varied internal and external contexts on the creation and management of organizational paradoxes in lean.

4. Case 1 - The Financial Company (Denmark)

The company is one of the biggest financial corporations in Denmark. The company offers a typical range of banking products and services for both Danish and international customers. To increase the efficiency of its operations, the Financial Company decided to implement lean in its transaction-processing operations with focus on the productivity of the case handling process. The company aimed to increase the productivity of the process by 20%. The increase in productivity was set to compensate for to the number of employees going into retirement within the next two or three years and to avoid hiring new employees. That is, the company decided to compensate for the natural reduction of employees through retirement by increasing the productivity of the remaining workforce.

Moreover, the company needed to change its staff promotion policy as part of the implementation strategy. Promotion to team leader position was often based on technical skills and knowledge about the claims handling process. Indeed, many of the team leaders were previously senior case handlers and the company promoted these case handlers to team leaders because of their technical skills and the experience in claims handling. This promotion policy raised tensions in the Financial Company during lean implementation, mainly because team leaders were required to take on new role based on lean flow knowledge and workforce management rather than the traditional technical skills in claims handling.

To get acquainted with lean philosophy, team leaders in the company normally go through a lean program training in order to learn and apply lean practices and tools. The lean training program includes the use of lean philosophy and practices to execute an improvement project related to the work area of the team leader. The project has two modules of 18 weeks each. The first module is called the analysis and implementation phase, and the second module the follow-up phase. In the first phase, team leaders are trained and supported by an external lean consultant in order to learn to apply lean practices in their respective projects. In the follow-up phase, the team leader is supposed to take ownership of the process increasingly as the support of the lean consultant is reduced gradually. During the project, on-the-job learning is intense as team leaders should get acquainted with lean practices and learn how to apply them in real work context. According to one lean consultant involved in the training:

“Team leaders have to learn lean and operations management techniques where they plan every single day and balance the work load of the employees... they are expected to become not only technical leaders but also process consultants by making improvements and eliminating the root cause of the problems”.

During lean implementation at the Financial Company, the organizing and belonging paradoxes accentuated and increased the resistance of team leaders towards the change. The next two sub-sections explain the emergence and accentuation of these two paradoxes, discuss the strategies used for dealing with them and present the outcomes.

The organizing paradox

The organizing paradox emerges at the company as team leaders are required to implement lean flow and follow lean standards instead of their traditional self-developed way of handling cases and claims. Team leaders resist standards because they believe standards limit their autonomy during case handling and reduce their ability to adjust the claims handling process to different types of claims with varying degrees of complexity. Managers have attempted to promote the acceptance of this paradox by communicating to team leaders that standards are not “sacred”. On the contrary, the discourse in the company was that standards can be improved by the users as a better standard is identified. According to one senior director, *“if an employee identify an opportunity to improve the process, then he or she should submit his idea to the formal suggestion system. By doing this, the idea will be analysed by the team and discussed with the team leader who submitted it. By doing so, the idea becomes everybody’s project”.*

Moreover, some team leaders resisted standards because of the risk of embarrassment in case their measured performance is assessed below the average performance of their colleagues. Other team leaders argued that standards can limit their autonomy in searching for all potential sources of errors that led to customers’ complaints. However, many team leaders noticed and recognized the benefits of following lean standards for their daily production and on workers’ motivation. According to one team leader:

“My claim handling workers feel that it is good to have standards because when they go home, they can say that it was a good day and they achieved their daily goals. By following lean standards and productivity measurements, one can still achieve the daily goal although there is still a bunch of cases waiting in line for the next day. Moreover, I keep telling my workers that the standard will be followed until we decide to change it... when we find better way of doing things, then we improve the standard”

.

Furthermore, one team leader explained that by following lean standards, employees could use their creativity to find better way of doing their work and to improve the existing standards, rather than to change operational procedures on individual basis or find different ways for handling similar cases or claims. However, explaining the benefits of following standards have not been always effective for convincing employees to adhere to standards. In these cases, acceptance strategies based on involvement and experimentation were used intensively and repetitively by the company in order to deal with this paradox and promote the acceptance of the organizing tensions. More specifically, the confrontation of the organizing paradox entailed the discussions of the tensions in groups, experimentation and trial-and-error learning, and the direct involvement of the most resistant members of the team in the improvement of standards. The experimentation and trial-and error learning were crucial for breaking the vicious circle of resistance as team leaders could put their own ideas into practice, observe the results, and improve. According to one lean consultant:

“We take the employees that put most resistance early on the improvement workshop where he or she can have more influence in the output of the process; in the first day of the workshop they might complain; however at certain point of the workshop they begin to get engaged in the process and contribute to the improvement effort... they have normally a lot of energy... they begin to see the benefits of the process and come up with a lot of good ideas for improvement; they can be considered change agents because other employees usually listen to them”.

However, in some cases, the acceptance strategies were not achieving the intended results and some team leaders were still resisting the new work organization based on lean thinking. In this case, the company adopted a top down push in order to make some employees participate in the improvement process. According to one manager: *“we communicate to the employees that lean has come to the department and will stay; so you have to decide what you want”.*

The belonging paradox

The belonging paradox has been noticed frequently in the Financial Company during the interviews. The belonging paradox emerges as team leaders are required to take on a new role during lean transformation and abandon the old role based on technical knowledge. According to the new work design, team leaders are expected to act as process and operations managers rather than firefighters or technical experts for case handling. One manager explained the tension associated with the belonging paradoxes among team leaders: *“People want to hold on the old role as firefighters because it has been the source of their prestige within the company; it is about letting go of the old role and embracing the new role; sometimes they suddenly embrace the new role and become good leaders... as soon as they reach some level of understanding... so they become the big advocates of the new role... when they see the effect of the new role and of the new tools on their daily work”.*

To facilitate the acceptance of the paradox and deal with the challenges of the new role, the follow-up phase of the projects was used by team leaders, mentors and lean consultants as a buffer period for reflection where people consolidate the gains achieved during the implementation phase, instead of starting new projects. In the reflection phase, the acceptance of lean tensions and paradoxes has increased as team leaders consolidate their knowledge about what has worked and what has not worked during the conversion to the new role. The acceptance of the paradox has enabled team leaders to take

on more challenging aspects of the new roles in relation to the dissemination of the lean mind-set and the use of lean tools in their respective areas when the training period is over. However, the belonging paradox has often required various sessions of coaching, mentoring and group discussions in order to achieve the new level of understanding and the acceptance of the new role among the employees. According to one manager: *“We invest in coaching and mentoring where an external consultant follows and helps the employee; we use also a maturity model where we assess the development of the employees; however, sometimes we can see that, even after many attempts, this employee is not the right man for this new role; so we have to find something else for him elsewhere”*.

Moreover, one director summarized the management view for dealing with the belonging paradox: *“First of all we have to be determined that this is something we want to do... and lean should not be seen as time-bound project... the project is there to facilitate broader change of behaviour and attitude... we tell our employee that we want this, so how can we help you to get on?”*. Table 3 summarizes the lean paradoxes, the strategies used to deal with them, the factors influencing the management of paradoxes, and the outcomes of change at the Financial Company.

Table 3: Organizational paradoxes of lean, the and management strategies and the outcomes in the Financial Company

Description of paradox	Management strategies and outcomes
<p><u>The organizing paradox:</u></p> <p>The organizing paradox emerges in the company as team leaders are required to implement lean flow and follow lean standards instead of their own way of handling cases and claims.</p>	<p>The management of the organizing paradox entailed the discussions of the tensions in groups, experimentation and trial-and-error learning, and the direct involvement of the most resistant members of the team in the improvement of standards.</p> <p><u>Outcomes:</u> People realized that standards could help them in their daily activities. However, in some instances, top management had pressure employees to adapt to lean organization or find other positions in the organization.</p>
<p><u>The belonging paradox:</u></p> <p>The belonging paradox emerges as team leaders are required to take on a new role during lean transformation and abandon the old role based on technical knowledge.</p>	<p>Team leaders, mentors and lean consultants used the follow up phase of the projects as a buffer period for reflection where people consolidated the gains achieved during the implementation phase instead of starting new projects. In the follow up phase, various sessions of discussions in groups, coaching and mentoring were used to achieve the new level of understanding and the acceptance of the new role among team leaders.</p> <p><u>Outcomes:</u> Most of the team leaders succeeded in the new role. However, the management had to replace some team leaders that failed to succeed or accept the new role.</p>

5. Case 2 - The cancer department at a university hospital

The university hospital has adopted lean philosophy as platform for improving efficiency and work conditions. In order to do so, the university hospital integrated lean practices in its global strategy and

dedicated considerable resources to lean implementation. An internal lean consultant unit organized lean implementation into waves of five to six departments – lasting one year each. A wave started with an intensive training course for the department lean implementation teams. During and after the course, a consultant from the unit was attached to each department for a period of 6–12 months. The cancer department has 350 employees and included wards, out-patient chemotherapy, radiation therapy, a laboratory, and a palliative section. A steering committee was established with the head nurse, the head consulting doctor, the leader of the lean project group, and the consultant from the lean unit. A lean project group was organized with a nurse as project leader and in addition a consulting doctor, two nurses, a secretary, a lab technician, and a radiologist. A relatively large number of activities were initiated concerning activities, such as delivery of chemotherapy medicine, collaboration between lab technicians and the chemotherapy outpatient clinic, handling of blood samples, handling of case records, establishment of kaizen boards, and the reorganization of patient booking in the chemotherapy outpatient clinic. It was also decided to reorganize the ward rounds, but that project never got off the ground.

The change strategy was based on extensive involvement of the concerned staff, who were supported by members of the lean project group and, if needed, the lean consultant. Some smaller changes were initiated by several kaizen workshops over one or two half-days, where representatives of the concerned staff analysed the problems using value stream mapping and came up with solutions. In other cases, working groups were established to analyse a particular problem and come up with a solution. Several changes, which the involved actors described as successful, were implemented, including higher quality medicine delivery, better track of blood samples and case records, the use of kaizen boards with many implemented suggestions, and reorganization of the work of the lab technicians. However, the reorganization of the patient booking in the chemotherapy outpatient clinic turned out, in particular, to be very problematic, and the department was still fighting to get the patient booking back on track when the project ended. The outcomes were experienced differently by the lab technicians and the nurses. The lab technicians were quite satisfied with the results whereas the nurse expressed severe dissatisfaction. The question was therefore to understand why the situation differed so dramatically between the two groups. Part of the explanation could be found in the differences in the change process adopted in the two units.

Starting with the laboratory, they initiated two major changes. The first one focussed on blood sampling and intubation of intravenous lines. Previously, the lab technicians were called to the outpatient clinic after arrival of the patient. They then had to identify the patient, search for a vacant couch, do the blood sampling and walk back to the lab. This task constituted a large proportion of the technicians' work and they spent considerable time walking from one place to another, and finding and sometimes waiting for vacant couches. They organized a kaizen workshop together with nurses from the outpatient clinic and identified possible solutions, which ended in a decision to reorganise that particular task. In the new procedure, the nurses ask the patients to walk to the lab where there will be one or two lab technicians on duty each in a room with a couch. The intubation and blood sampling take only a couple of minutes and the patients used time they would previously have just spent waiting in the clinic.

The other major change was the introduction of kaizen meetings. Once a week the lab technicians organize a standing meeting around a kaizen board where they suggest ways of improving everything related to the lab and the technicians' work. By the time the project ended, they had made 84 suggestions, 68 of which had been implemented. Among others, the suggestions have resulted in more space in the quite congested lab, a more secure supply of material, and higher safety in handling of blood

samples. In the interviews, both the head lab technician and the technicians told that they experienced lean as successful and beneficial for the work environment.

The outpatient clinic showed a quite different picture. The change started successfully with the reorganization of the communication lines between the pharmacy and the clinic, which ensured delivery of medicine in time. However, after that effort, the change faced an increasing resistance by the nurses as the department management and the lean implementation group decided to introduce a new IT-program. This program aimed to achieve more systematic planning of patients' admission flow, which would reduce waiting time and increase the efficiency of the treatment facilities. Among other things, the new system would reduce the considerable misalignment between the planning of patient booking and the expected duration of the administration of the chemotherapy. It turned out that the IT-implementation was much more complicated than expected, and for quite some time, patients' booking was still fraught with problems. Nevertheless, the new booking system changed considerably the work of the nurses. Previously, nurses used to book their own patients individually, whereas, with the new IT system, bookings are done by a secretary. Nurses explained that the new system created more work, partly because of the persistent booking problems and partly because they had to channel the bookings through a secretary rather than doing the booking themselves. Parallel to the new booking system, attempts were also made to introduce kaizen meetings in the outpatient clinic, but with little success.

Associated with the above considerations of the new IT system, the nurses had quite negative views of lean, and considered that lean had created more work that deteriorated their work environment. A large group of the nurses tended to interpret the IT-program as an attack on their professionalism, and expressed a serious concern about the negative effects of the new system on the quality of care. That is, the nurses believed that the flexibility of the patient professional care was seriously weakened by the new standardized booking system, as nurses were often unable to accommodate the patients' special needs.

The organizing paradox

The organizing paradox rotates on tensions between autonomy of the workers and standardization imposed by the new system. The paradoxical lens helps us make sense of this difference in the reactions of the two groups of employees: the lab technicians, on the one hand, and the nurses on the other. The paradoxical tensions had intensified during the organization of the outpatient process as nurses valued autonomy as opposed to increased standardization. Yet, the organizing paradox had much attenuated effect on the lab technicians. One explanation is that the content of work of the lab technicians contained more repetitive and measurable tasks than that of the outpatients section. Indeed, the lab tasks consisted of reasonably standardized tasks with a strong emphasis on safety matters, such as avoiding any chance of mixing or delaying blood samples. As consequence, lab technicians valued the reorganization of their activities as it increased the quality and safety control of their tasks. As for the outpatient clinic, the nurses valued strongly their work autonomy, which increased the resistance to the standardization imposed by the new system. Indeed, autonomy was more relevant for the outpatient section as it contained varied types of tasks requiring flexible decision making associated with local control. In consequence, nurses opposed the loss of autonomy imposed by the new system and experienced a reduction in their degree of control regarding the quality of the care to the patients.

The results from this study suggest that lean implementation may challenge the traditional understanding of professionalism in hospitals – at least for nurses. Traditionally, treatment and care have had a

strong element of trial-and-error. Usually, a certain treatment is adopted and the result is monitored and adjusted according to the patient's behaviour and needs. Collective standards seem obviously to conflict with the possibility for the individual nurse to take her own decisions based on her own professional judgement. In the example given here, the idea was to make patient booking more efficient, in adherence to the operational value (McClellan et al., 2008), whereas the nurses were afraid that the standardized booking would have negative consequences for the experiential value as the patients may feel a lack of concern for their personal priorities.

The management strategies for dealing with the organization paradox included acceptance strategies, such as employee involvement, experimentation and trial and error, and resolution strategy, such as synthesis. While the acceptance strategies seemed to deal effectively with the organizing paradox of the lab technicians, it failed to reduce the tensions of the nurses in the outpatient clinic. In the case of the outpatient clinic, the management used a resolution strategy (synthesis), which entail a solution that accommodates standardization and autonomy. Indeed, the management focused on correcting the constraints and problems of the new IT system, which increased the usability of the system by the nurses. At the same time, the management attempted to secure commitment to the new system by promoting intensive involvement of nurses in the improvement of the system. However, the resolution strategy reduced the tension temporarily as nurses and doctors were still resisting the standardization of their activities, which caused the roll of the new system to stop.

The performing paradox

The organizing paradox in the hospital is intimately connected to the performing paradox and rotates on tensions between cost efficiency (treating the maximum number of patients) and individualized care (the current approach adopted by nurses and doctors). Perhaps the increasing demands for treatment and the growing complexity of care activities associated with government pressure to increase efficiency created a need to develop a new balance between the traditional individual professionalism and collective standards. The lean approach entails the standardization of work tasks, which increases efficiency and enables the treatment of higher number of patients. Within the context of this study, standardization seems more suitable to the activities of lab technicians, whereas it challenges the varied nature of tasks of nurses and doctors, which require higher degree of autonomy for dealing with special cases. This is a real dilemma because standards increases efficiency and allows the professional to focus on the more creative tasks. However, at the same time standards limit the individual assessments, which are a crucial part of nurses' and doctors' professionalism.

In order to deal with the performing paradox, the management adopted a resolution strategy based on synthesis that can achieve a balance between efficiency and individualized care. As for the increase of efficiency, the use of the new system benefits patients by reducing the waiting time for commencement of treatment as well as during the treatment process. However, in order to secure a certain level of autonomy in the treatment of outpatients, the management enabled the nurses to make the bookings of the patients instead of a secretary, which maintained a certain level of nurses' autonomy. By adding the possibility for nurses to make the outpatients booking, the management was able to reduce the tensions temporarily. However, the inherent tensions between efficiency and individualized care persisted as nurses and doctors were still valuing the autonomy of patients' treatment.

Table 4: Organizational paradoxes, management strategies and outcomes at company 2

Description of paradox	Management strategies and Outcomes
<p><u>The organizing paradox</u></p> <p>This organizing paradox accentuated between the need for individual care of patients, on the one hand, and the standardization introduced by the new system.</p> <p>The organizing paradox was also present in the control of the booking system: booking controlled by nurses (autonomy) versus booking controlled by the protocol of the system (standardization).</p>	<p>The management used both acceptance and resolution strategies. The acceptance strategies entailed employee involvement and experimentation, and were effective in reducing the organizing tensions of the lab technicians. However, the resolution strategy (synthesis) were needed to deal with the persistent tensions in the outpatients' clinic. The synthesis entailed solutions to a range of functional problems of the system with increased involvement of nurses and doctors.</p> <p><u>Outcomes:</u></p> <p>The booking system ended up working as intended with a more efficient flow of patients, and the lab experienced several improvements in efficiency of blood sampling and resource utilisation. However, the resistance to standardization remained high among nurses and doctors and, therefore, further implementation of the system came to a stop.</p>
<p><u>The performing paradox</u></p> <p>The performing paradox rotates around tensions between the number of treated patients and the quality of the care</p>	<p>The synthesis (resolution strategy) entailed that the nurses can make patients bookings directly in the system, which maintained a certain level of individualized care for nurses.</p> <p><u>Outcomes:</u></p> <p>With the possibility for nurses to book directly in the system, the initial resistance was reduced. However, the basic tensions between efficiency and individualized care persisted among nurses and doctors.</p>

6. Case 3 - The garment manufacturer in Bangladesh

The company is one of Bangladesh's leading manufacturers of ready-made garments. As the company was regularly producing at the limits of its capacity, it embarked on expansion and optimization project in 2013 in order to increase its production capacity and competitiveness. The main clients include international retail chains and warehouses. The holding company employs more than 6,300 workers, the large majority of whom (70%) are women. As the group was regularly manufacturing at the limits of its capacity, it has since 2010 invested in new machinery and in training. Since the 1980s, the RMG industry in Bangladesh has experienced rapid growth. With the Chinese RMG industry in decline, Bangladesh has emerged as a rapidly growing global producer of garments. Owing to low wages and workforce availability, RMG-export levels in Bangladesh have grown steadily with average annual growth

rates above 10%, and many leading international retailers from Europe and the US have adopted Bangladesh as main sourcing country. In 2013-2014, RMG exports amounted to USD 24.5 billion and accounted for 80% of the nation's export earnings. The RMG industry in Bangladesh employs some 4.2 million out of Bangladesh's total workforce of about 80 millions. About 80% of these workers are women.

In order to remain globally competitive, RMG manufacturers in Bangladesh need to invest in the skills development of their workforce in order to improve productivity and increase sales. Since most of the machine operators' employees are poorly educated, manufacturers are increasingly looking for higher-skilled workers and professionals to increase the productivity of their plants. Moreover, there are only few dedicated training programs for garment workers at higher skill levels. Given the poor public education and limited vocational garment-specific training, it is important to involve the private sector in fostering skills development. The widest skills gap is in production mid-management, i.e. line supervisors and line managers. As there is no dedicated training institute in the country for the relevant technical skills, the line supervisors and line managers often have a weak understanding of industrial engineering and modern production systems. Given the increasingly sophisticated machines that are used for achieving greater automation and higher productivity, supervisors also need a good technical understanding of the different specialized machines, requiring special on-the-job training. In terms of people management skills, the company has also identified some deficits in leadership and communication skills among its production supervisors and managers.

Learning paradox

Learning paradoxes surface as companies attempt to change, adjust and innovate, which involve both building upon existing knowledge and resources in order to improve performance (O'Reilly and Tushman, 2008). Line supervisors and production managers need a deep understanding of modern production systems, and a technical expertise on the different types of machines, as well as leadership and communication skills. At the level of machine operators, the company can easily recruit a sufficiently large number of workers, who must be trained internally to acquire the required manufacturing skills and to comply with health and safety standards. Regarding unskilled machine operators, the company has a sufficient supply of women available from the villages nearby who can be recruited directly at the factory gate. These women need intensive on-the-job training to reach an acceptable level of quality and efficiency. Moreover, these new workers often lack a proper understanding of health and safety issues and most of them lack basic school education.

To tackle these skills and education gaps, the company has introduced a range of initiatives to foster the skills development of its workforce focusing mainly on machine operators, line supervisors and middle managers. In this context, the company has introduced training courses for productivity as an integral part of a larger initiative of production improvement. Moreover, the company introduced a separate training station for providing practical training and production courses for established staff without hampering the actual production process. One of the initiative aimed to radically transform the production process with the help of outside consultants, who have experience in modern manufacturing systems such as lean and agile manufacturing. From 2012 to 2014, the consultants radically transformed operations at the company by introducing specialization in production (critical tasks were allocated to specially trained workers), changing the production layout to more lean flow and eliminate wastes, and by introducing new machines to increase automation.

In addition to these changes in operations, the initiative involved extensive training courses covering the entire workforce. With the help of job descriptions detailing the skill requirements for each position, all staff from machine operators to the managing director had their aptitude for their current position assessed. Dedicated training modules were then provided as appropriate, based on an elaborate training manual: the modules involved 4 weeks of theoretical training for lean production tools (all workers) and seven days for production leadership (managers, line chiefs and supervisors). Additionally, all sewing operators and workers were trained on the job and at a separate training station. From the ranks of production managers, more than 100 employees received training related to lean manufacturing. Moreover, almost all production workers received basic theoretical and practical training. To sustain the training initiative, one consultant with long experience in the international garments sector was hired as plant manager, who has enabled the company to provide the needed training to employees and to offer refresher training courses internally.

However, the company soon noticed that an increasing number of highly qualified workers started to leave the company as they could easily find jobs with higher salaries in nearby competitors. As consequence, the learning paradox accentuated in the company as the more investment in training and education, the more skilled workers find jobs elsewhere with higher salaries, and usually in competitors nearby. Indeed, the retention of workers is already major issue in Bangladesh garment industry in general. Attrition rates of more than 5% per month are common among garment manufacturers in Bangladesh. There are at least two main reasons for the high attrition rate in this industry. First, a high proportion of employees are migrant workers from other parts of the country, who are likely to return to their home region. Second, a high share of the employees are women, who often stop working once they are married and have children. Moreover, the company loose often women workers who return to their home villages and marry. Then, in order to deal with this learning paradox and increase the retention of workers, the company soon realized that increasing workers skills was not sufficient alone. In order to retain workers, the company had to look outside the shop-floor reaching to the families of workers and to the community nearby where workers live. For instance, the company provided childcare for the children of employees and free transport to work. Moreover, the company invested in the local community by improving roads and sewage systems.

Moreover, the company was sourcing most of its fabrics from China. However, in an effort to support as much as possible the economy of the local community, the company started to purchase fabrics from local suppliers. Today, these local purchases account for about 15% of the fabrics bought by the company. Overall, about 20% of all supplies are produced in Bangladesh, including packaging material such as plastic bags and cardboard boxes. Moreover, the company supports the development of its suppliers through skills transfer, where the purchasers invite pre-selected suppliers to the main production site of the company, and explain to them the quality requirements posed by international buyers and the quality-testing procedures. Once a local supplier is engaged, the company sourcing team continuously interacts with this supplier in case of quality issues and support then in finding solutions to fix the underlying problems. The purchasers also regularly visit the suppliers' production facilities to provide support and prevent potential problems related to quality and delivery time. Apart from knowledge transfer, the company supports its local suppliers financially by paying invoices right away and sometimes even in advance of delivery. In addition, the company conducts regular audits of its suppliers to ensure compliance with safety and health standards, suggesting specific corrective actions and deadlines for implementation, monitoring progress, and providing training sessions on health and safety and environmental concerns.

Performing paradox

The performing paradox rotates around competing and even contradictory demands among different stakeholders. Moreover, organizational change tends to exacerbate the tensions of performing by fostering competing measures of performance. In this company, the performing paradox rotates around tensions between the efforts to increase productivity and remain competitive, on the one hand, and the efforts to comply with code of conduct and maintain good occupational health and safety (OHS) conditions for workers, on the other hand.

A look the Bangladeshi context reveals important features of this performing paradox. Indeed, the garment sector in Bangladesh has been hit by several deadly accidents with thousands of fatalities while producing garment for international brands from Europe and USA. Moreover, this sector is known to be infamous for low wages, unsafe working conditions, long overtime hours, associated with poor safety regulations, inadequate reinforcement of laws and inefficient factory inspections. More specifically, international pressure for safer work conditions has intensified following the collapse of the Rana Plaza building in 2013. In consequence, the Accord on Fire and Building Safety in Bangladesh was signed that year by the majority of apparel brands, retailers and importers, Bangladeshi trade unions, and NGOs. The Accord aims to improve safety in the garment sector (fire, building and electrical safety) by means of independent factory inspections, with corrective action plans, as well providing training on fire precautions and operational health and safety.

In addition to these substantial changes in the country's context, Bangladeshi RMG manufacturers have seen their margins under pressure because of international buyers' use of their bargaining power to keep prices low, increase of minimum wages approved by the government, tougher regulation on health and safety, and large investments to be made in further fire and building-safety measures. In consequence, the company management was putting pressure on workers to increase productivity while adhering to safety rules and procedures. However, in some cases, workers were shortcutting safety procedures especially when the delivery deadline is under risk of delay.

The main actions of the company for dealing with the performing paradox were focused on implementing improvements in the production processes, which can increase productivity and improve OHS conditions simultaneously. Indeed, research on work conditions and lean implementation reveal that same issues - such as improper workplace design, poor human-machine fit and inappropriate incentives – are responsible for both worsening work conditions and reducing worker productivity. As consequence, it would be difficult to improve productivity and OHS simultaneously without dealing with these joint safety and productivity issues (Shikdar and Sawaqed 2003). Moreover, there is evidence in the literature that some lean tools have positive effect on work productivity and on workers' health and safety. For instance, Gapp et al. (Gapp, Fisher, and Kobayashi 2008) argue that "*a primary objective of practising 5S is to maximise the level of workplace health and safety in conjunction with increased productivity*" (p. 567).

In this context, workers would benefit from better working conditions through changes in the production layout that improve both ergonomic conditions of workers and their productivity. More specifically, higher desks and ergonomic chairs reduce the strain on workers' backs caused by excessive bending and extreme body movements. Another important strategy for dealing with the performing paradox is based on Goal setting. Goal setting at this company entailed that the increase in workers' salaries were linked to productivity gains through a transparent efficiency bonus, and to occupational health and safety compliance of all workers in the production line. These improvements in the production line and changes in work practices not only benefit workers' health but also increase efficiency.

More importantly, a central component in simultaneously improving productivity and working conditions for workers is the existence of a well-working industrial relations system. Despite recent regulatory changes and the creation of several factory level trade unions and employers' associations, Bangladesh is in the very early stages of the development of its industrial relations system. The trade unions in Bangladesh have limited knowledge about social dialogue, collective bargaining, and productivity based salary structures. Moreover, the garment employers are frequently hostile to unions and consider them as a source of hassles and problems. Therefore, introducing social dialogue in the garment industry in Bangladesh faces significant challenges, but contains relevant opportunities for creating the conditions for synergies between improved work environment, social dialogue and productivity.

By adopting solutions that improve both OHS and productivity and introduce new terms to resolve the tension, the main strategy of the company for dealing with the performing paradox is a synthesis of the two poles of the paradox. As such, lean implementation reflects this synthesis as it introduces solutions that benefit productivity and OHS conditions simultaneously. Moreover, the introduction of social dialogue between company, unions and workers are likely to facilitate this synthesis. Indeed, the company was still reluctant to engage in social dialog activities because - it is believed - that this social dialogue could lead to counterproductive behavior among the employees. Indeed, the company fears that the employees might go on strike if social dialog was more pronounced, which partially reflects the confrontational strategies used by existing trade unions.

At its core, social dialogue is a process involving workers, employers, trade unions and governments. Social dialogue can involve Collective bargaining, Workplace cooperation, and Tripartite social dialogue. Collective bargaining takes place between workers' organizations and employers or representative of employers' organization. It commonly deals with wages, working time, and terms of employment, as well as ongoing relations between workers and employers. Workplace cooperation is another form of social dialogue that can be used to improve work conditions and organization, introduce new production methods, and secure a safe working environment. Tripartite social dialogue involves the participation of the Government and usually deals with policy issues. The company was still in the initial phase and was implementing some features of collective bargaining and workplace cooperation. Despite some initial benefits and open dialogue between workers and employers, the sustainability of social dialogue was still elusive as it depends on a long-term strategy, which involves political and economic stability and strong representation of workers.

Moreover, the role of social dialogue could be relevant for dealing with the learning paradox as well. Indeed, increasing workers skills, without collective negotiation that involves work conditions, salaries and career planning, will most likely increase the turnover rate as these workers are easy target for competitors. Collective bargaining entails sustainable benefits for employers, workers, and society in general. Collective bargaining can increase the trust associated with the employment relationship between workers and companies, greater motivation and retention, and ultimately higher performance. Better collective bargaining between company and workers can help to reduce the impact of shocks and seasonality on unemployment by enabling adjustments in wages and working time, so that layoffs could be reduced or avoided. Collective bargaining makes it easier to engage in temporary wage or working-time concessions. On the one hand, collective bargaining often reduces transaction costs involved in the negotiation of temporary wage and working-time reductions between workers and companies and facilitate their implementation. On the other, because of wage and working-time concessions are coordinated between workers and companies, collective bargaining can make these concessions more acceptable to workers. In summary, collective bargaining represents a powerful resolution strategy to deal

with both the learning and performing paradoxes by achieving a synthesis that accommodate the two opposing pole of the paradoxes. Table 5 contains a summary of the learning and performing paradoxes at the company, the management strategies used to deal with these paradoxes and the related outcomes.

Table 5: Organizational paradoxes, management strategies and outcomes

Description of paradox	Management strategies and Outcomes
<p><u>The learning paradox</u></p> <p>This paradox accentuates as the company invest in increasing the skills level of its workers. Yet, as workers become more skilled, they are more likely to find jobs elsewhere.</p>	<p>The company provided both technical and behavioural training to all levels of staff and workers. Moreover, the company helped the family of workers and the local community where workers live. For instance, the company provided childcare for the children of employees and transport between work and home. The company also invested in the local community by improving roads and sewage systems, and started to purchase fabrics from local suppliers in an attempt to boost local economy.</p> <p><u>Outcomes:</u></p> <p>The company showed a turnover rate of 4%, which is – according to the company - lower than the industry average. The company spotted a new trend among workers as they started to move to houses situated closer to the company.</p>
<p><u>The performing paradox</u></p> <p>In this company, the performing paradox rotates around tensions between the efforts to increase competitiveness and productivity, on the one hand, and the efforts to ensure compliance and maintain good occupational health and safety (OHS) conditions for workers, on the other hand.</p>	<p>The main strategy for dealing for dealing with this paradox focused on implementing improvements in the production processes benefitting productivity and OHS conditions simultaneously (Resolution strategy: Synthesis).</p> <p>The other strategy was Goal setting, which entailed that increases in workers' salaries were linked to productivity gains through a transparent efficiency bonus, and to occupational health and safety compliance of all workers in the production line. These improvements in work practices not only benefited workers' health but also increased efficiency.</p> <p>The company started to introduce features of social dialogue, such as collective bargaining and workplace cooperation. Yet, the effect of these features was still not evident.</p> <p><u>Outcomes</u></p> <p>The company reported a lower number of accidents and better OHS conditions than the industry average. According to the company, workers are less likely to skip safety procedures because the compliance with safety procedures will not reduce their productivity, on the contrary, it will boost their bonus and salaries.</p>

Conclusions and recommendations

In this chapter, we presented four types of organizational paradoxes of lean representing four different motivations for resisting lean change. We investigated also the different types of strategies for dealing with these paradoxes and the outcomes. Through the investigation of the organisational paradoxes in lean, we sought to add clarity to the processes of lean implementation in three case companies. The identification of the various types of paradoxes in lean has enabled companies to better understand the causes of resistance to lean implementation and, in consequence, take effective actions for facilitating lean implementation. That is, companies would increase the likelihood of successful lean transformation if they focus on the relevant tensions among employees. For instance, in case 3 (the garment manufacturer in Bangladesh), the learning paradox had accentuated as skilled workers were increasingly leaving the company, and in case 1 (The Financial Company), the belonging paradox was increasingly noticed as team leaders had stronger attachment to their work identity. As such, the paradoxical framework constituted an alternative to the top down approach. More specifically, this study recommends that companies should not rush to action before understanding the different sources of resistance to lean implementation among workers. By not rushing to actions through top down approach, companies are more likely to target the real causes of resistance and increase the likelihood of success associated with lean transformation.

Furthermore, this study adds to previous knowledge on organizational paradoxes in lean by investigating paradoxical tensions in developing and industrializing country (e.g. Bangladesh). While previous studies in developing countries have mainly revealed the development of three paradoxes in lean (organizing, performing, and belonging) (Maalouf and Gammelgaard 2016), the garment manufacturer case revealed the relevance of the learning paradox as the motivation for workers to leave the company had increased and endangered the success of lean transformation (loss of knowledge). Moreover, the garment manufacturer case emphasized the importance of including external institutional factors within the range of actions used for dealing with paradoxes. For instance, the garment manufacturer in Bangladesh had to reach to the families and local communities where the workers live in order to deal with the learning and performing paradoxes and avoid the loss of skilled workers.

Through the investigation of the organisational paradoxes in lean, we sought to add clarity to the processes of lean transformation in 3 cases companies from different sectors and geographies (Financial (Denmark), Hospital (Denmark), and Garment manufacturer (Bangladesh)). This study has increased our understanding of the different motivations of workers, supervisors and managers to resistance lean transformation. In consequence, to avoid unexpected negative outcomes, companies must understand the nature of lean paradoxes and their impact on individuals within their organizations. More importantly, dealing with organizational paradoxes in lean is a long-term process, which involves learning, experimentation, and trial and errors.

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